



Bridging the Currents:

Assessing East Asia's Potential in Cross-border Electricity Cooperation



Presentation school:

Kaohsiung Municipal Kaohsiung Senior High School

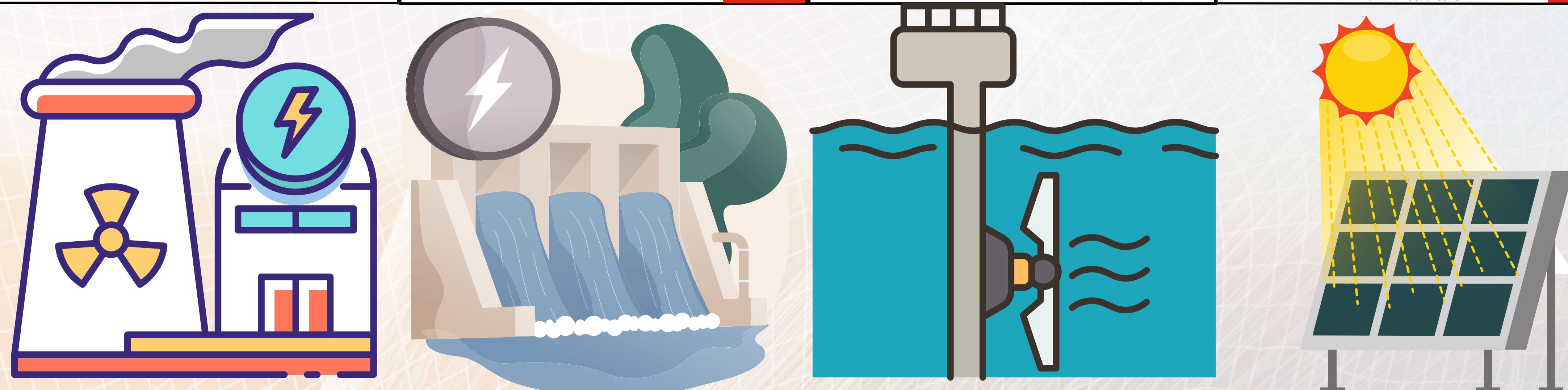
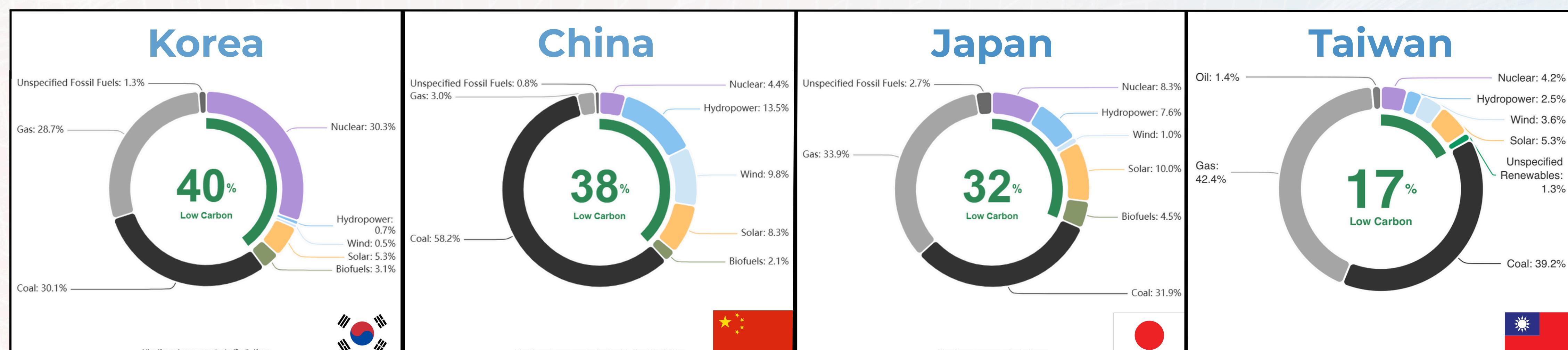
SDGs Targets :

7(Affordable and Clean Energy)

17(Partnerships for the goals)

Low carbon rate(2024):

South Korea(40%) > China(38%) > Japan(32%)>Taiwan(17%)



What is Cross-Border Electricity Cooperation

1. cross-regional power generation technology
2. enhance the cooperation between different regions
3. improve the efficiency of green energy use

Motivation and Purpose

1. East Asian Grid Reciprocity
2. Environmental sustainability
3. Reducing dependence on fossil fuels
4. Increase the use of green electricity

Research Methods

Provide electricity information 
 Provide world ocean current data 
 Provide international policy information

High Voltage Direct Current

1. Long distance, large capacity, point-to-point transmission
2. Underwater long-distance power transmission
3. Realize the connection between new energy generation points and AC systems

Cable Limits, Energy Bottlenecks

1. Cables are difficult to install in remote, mountainous, or cross-sea regions.
2. Transmission is hindered, leading to inefficient energy distribution.
3. If renewable energy cannot be delivered, it becomes wasted potential.

Conclusion

Encourage resource sharing



Promote regional demonstration networks.



Achieve a fully connected grid.

Future Possibilities

- Wireless power transmission
- Space-based energy systems
- Alternative solutions beyond cables

Electricity data(South Korea)Searched from:
<https://lowcarbonpower.org/zht/region/%E5%8D%97%E9%9F%93>

Electricity data(Japan)Searched from:
<https://lowcarbonpower.org/zht/region/%E5%97%A5%E6%9C%AC>

Electricity data(China)Searched from:
<https://lowcarbonpower.org/zht/region/%E4%B8%AD%E8%8F%A8%E4%BA%BA%E6%B0%91%E5%85%B1%E5%92%8C%E5%9C%8B>

HVDC technology Searched from:
<https://www.allumiax.com/blog/high-voltage-direct-current-hvdc-transmission>

Electricity data(Taiwan)Searched from:
<https://lowcarbonpower.org/zht/region/%E4%B8%AD%E8%8F%A8%E6%B0%91%E5%9C%8B%EF%BC%88%E5%8F%80%E7%81%A3%EF%BC%89>

HVDC technology Searched from:
<https://dataknit1988.blogspot.com/2013/11/blog-post.html>

References